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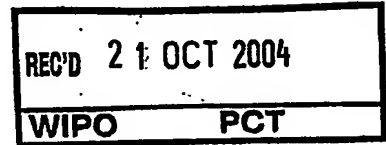
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Patentanmeldung Nr. Patent application No. Demande de brevet n°

03300141.3

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Method of playing a multimedia content transmitted by a third party on a user device

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DESCRIPTION

METHOD OF PLAYING A MULTIMEDIA CONTENT TRANSMITTED BY A THIRD PARTY ON A USER DEVICE

Field of the invention

5 The invention relates to a user device, a third party device, and a system comprising a user device, a third party device and a network, wherein said user device and said third party device comprise means for communicating via said network.

 The invention also relates to a method of playing a multimedia content on a user device, and a program comprising instructions for implementing such a method when
10 executed by a processor in a user device.

 For example the invention applies to personal communication devices like phones, ADSL modems, Set-Top-Boxes having Web access, or the like.

Background of the invention

15 US patent application n°20020193094A1 describes a method of downloading a phone software product (like games, ring tones, banners, logos...) to a wireless phone on a user request. This is achieved by dialling a pay-per-call number belonging to a special pay-per-call numbering plan. The call is routed to a wireless telephone service provider and then to a software products content provider. The software products content provider prompt the user
20 to select one or more software products to be downloaded and transfer the selected software product to the wireless telephone service provider which in turn transfers the software product to the wireless phone via an SMS gateway. The wireless service provider bills the subscriber at a premium rate for the phone call and transfers at least a portion of the premium rate to the software products content provider as payment for the downloaded software
25 product.

 One of the objects of the invention is to propose another application in which a multimedia content is transmitted to a user device, for example a mobile phone, via a network.

30 Summary of the invention

 A user device according to the invention is defined in claims 1 to 4. A method of playing a multimedia content on a user device according to the invention is defined in claims

5 to 9. A third party device according to the invention is defined in claim 10. A system according to the invention is defined in claim 11, and a program according to the invention is defined in claim 12.

5 A user device according to the invention comprises means for communicating via a network, means for booting, means for implementing during said booting a protocol for transmission of a multimedia content by a third party device to said user device via said network, and means for playing during said booting a multimedia content transmitted by said third party device.

10 With the invention a protocol for transmission of a multimedia content from a third party to the user device is automatically implemented each time the user device is booted up without any interaction of the user, which means that there is no selection by the user of the transmitted multimedia content. When the user switches on his/her device, a multimedia content is automatically played. This multimedia content is customized by the third party and can be updated by the third party if required. Transmission and playing take place during
15 booting.

One advantage of the invention is to allow transmission of a start-up multimedia content (for instance a video introduction, a video logo, an advertisement...) from a third party to a user device. By way of example the third party can be the operator of the network, a content provider or the manufacturer of the user device. With the invention such a start-up
20 multimedia content is customized by the third party and can be updated whenever the third party wishes to do so.

Another advantage of the invention is that the transmission of such a start-up multimedia content from the third party to the user device is done in a way that minimizes the inconvenience for the user. With the invention, the multimedia content is transmitted and
25 played while the user device is booting. During booting, the user doesn't have access to the user device. However the communication means of the user device can operate from an early stage of the booting phase (usually what takes time in the booting is charging the operating system of the user device; in average this may take 30s. or even more for high end devices). The invention takes advantage of this situation by proposing that a start-up multimedia
30 content is transmitted and played during a time period where the user would anyway be unable to use his/her device. If the playback is terminated at the end of the booting, then there is no inconvenience at all for the user.

Transmission from said third party device to said user device is achieved either by downloading or by streaming. Downloading requires that the multimedia content is stored in

a memory in the user device. Streaming has the advantage that such storage in the user device is not needed. When the downloading mode is used, implementation of the transmission protocol only leads to an effective downloading of a multimedia content when the third party wishes to update the multimedia content to be played by the user device during booting.

5 Advantageously the multimedia content is compressed in order to lower the network resources required for transmission. For example it is compressed by using the H263 standard.

 In a specific embodiment of the invention, when the multimedia content is streamed by the third party device, playing of the multimedia content is stopped when the booting is
10 over in order that the user may start using his/her device immediately.

Brief description of the drawings:

These and other aspects of the invention are further described by reference to the following figures:

- 15 - Fig.1 is a schematic diagram of an example of a system according to the invention,
- Fig.2 is a general schematic diagram of a method according to the invention of playing a multimedia content in a user device,
- Fig.3 is a schematic diagram of a first alternative of the method of Fig.2;
- Fig.4 is a schematic diagram of a second alternative of the method of Fig.2;
- 20 - Fig.5 is a block diagram of a user device according to the invention,
- Fig.6 is a block diagram of a third party device according to the invention.

Description of embodiments

The system represented in figure 1 comprises a user device 10, a network 20 and a
25 third party device 30. The network 20 comprises a telephone network 40 having a Web or a WAP gateway 50. The third party device 30 is a Web or a WAP server having access to the Web 60.

In a first example, the telephone network 40 is of the GPRS or UMTS type, and the user device is a mobile phone having access to the telephone network 40 via a radio link. In a
30 second example, the user device is an ADSL box or a Set-Top-Box connected to the telephone network 40 via a telephone wire.

The telephone network 40 is operated by an operator. The third party may be the operator of the network 40 or any other actor like the manufacturer of the user device or a content provider having a business relationship with the operator.

Fig.2 is a general block diagram of a method according to the invention of playing a multimedia content on the user device 10. As indicated in Fig.2, this method comprises a step 100 of initiating the booting of the user device 10. This step 100 is executed when the user switches on the user device. Then three processes P1, P2 and P3 are run in parallel:

- 5 - the booting process P1 (box 102),
- a process P2 of implementing a protocol for transmission of a multimedia content from the third party device 30 to the user device 10 (box 104),
- a process P3 of playing a multimedia content transmitted by the third party device 30 (box 106).

10 Depending on the embodiment that is considered there may be a relationship between processes P2 and P3. In Fig.2, this relationship is represented by an arrow 108.

When all three processes are over (which is represented in box 109), the user device is available to the user for normal operations.

A first embodiment of the method of Fig.2 will now be described in details by
 15 reference to Fig.3. In this first embodiment, the user device 10 has a content memory MEM for storing the content V_{BOOT} to be played during booting. The content playing process P3 plays the content V_{BOOT} stored in the content memory MEM when the user device is switched on. The content transmission process P2 allows replacement of the content to be played during booting. This is achieved by downloading a new content. The new content will be
 20 played during the next booting (that is next time the user device will be switched on).

It is to be noted that downloading takes time and therefore the process P2 may finish after completion of the booting process P1.

In this first embodiment, the process P2 of implementing the content transmission protocol comprises:

- 25 - a step 110 of transmitting a first request RD1 from said user device 10 to said third party device 30, the first request RD1 asking whether the third party device 30 has a content to download to said user device 10,
- a step 112 of transmitting a positive response AO from the third party device 30 to the user device 10 when the third party device has a multimedia content to download,
- 30 - a step 114 of transmitting a second request RD2 from the user device 10 to the third party device 30, said second request asking for the download of a content,
- a step 116 of downloading a content V_D from said third party device to said user device, and
- a step 118 of storing the downloaded content V_D into the content memory MEM.

In this first alternative the content playing process P3 plays the content V_{MEM} (if any) that is stored in the content memory MEM prior to the execution of the process P2.

In this first alternative the content transmission protocol is based on the HTTP transport protocol. By way of example, the first request RD1 contains a unique identifier of the current start-up content V_{BOOT} played by the user device 10 during booting. This identifier can be the name of the content file, a URL of the content file, a MD5 key, or the like. This unique identifier is used by the third party device 30 to decide whether or not a new content is to be downloaded to the user device 10, that is whether it has to send a positive response to the user device 10. Upon reception of a positive response AO, the user device 10 sends the second request RD2 asking for the download of a content. This RD2 request points towards a CGI script (CGI stands for Common Gateway Interface) hosted by the third party device 30. Upon reception of the request RD2 by the third party device 30, the CGI script is executed which results in the download of the appropriate content.

In another embodiment not represented here, sending the second request RD2 upon reception of a positive response AO is not systematic. The user device 10 may decide based on one or more pre-defined criteria whether or not it sends the second request RD2. For example, the load of the network, or the size of the available memory can be a criterion.

In an alternative embodiment the first request RD1 doesn't contain any identifier of the current start-up content V_{BOOT} stored in the user device. In place of sending such an identifier, the third party device keeps a record of the start-up content(s) currently stored in the user devices and decides whether or not to send a new content by looking up its record.

A second embodiment of the method of Fig.2 will now be described in details by reference to Fig.4. In this second embodiment no start-up content is stored in the user device 10. The start-up content to be played during booting is transmitted from the third party device 30 to the user device 10 by streaming each time the user device 10 is booted up. The process P2 of implementing the content transmission protocol comprises:

- a step 120 of transmitting a request RS from the user device 10 to the third party device 30, said request asking for the streaming of a content, and
- a step 122 of streaming a content from the third party device 30 to the user device 10 in answer to said request.

In this second embodiment the content playing process P3 plays the streamed content as it is received by the user device 10.

In this second embodiment, the content transmission protocol is based on the RTSP transport protocol. By way of example, the request RS points towards a known gateway in

the network (for example gateway 50 in Fig.1) and the gateway contains a redirection to a third party device 30 where the content to stream is hosted.

Optionally, in this second embodiment the streaming and playing processes P2 and P3 are forced to terminate as soon as the booting process P1 is over in order that the user may start using the user device 10. In Fig.4, this forced termination of processes P2 and P3 is represented by an arrow 124.

Fig.5 gives a representation of a user device 10. The user device 10 comprises:

- a transmission/reception circuit 200 for transmission/reception via the network 20,
- a display 202,
- a user interface 204,
- a content player 206 for playing content,
- a microprocessor arrangement 208 which comprises a working memory 210, a program memory 212 and processor 214, and
- an interconnection bus 216.

In the first embodiment of the invention the user device 10 also comprises a content memory 220 for storing content, in particular the content that is to be played during booting. As this memory can be omitted in the second alternative embodiment of the invention, it is represented in dashed lines.

The program memory 212 contains programs for controlling the operation of the user device 10 and amongst others a program PU (or a set of programs) for implementing the above-described processes P1, P2 and P3.

Fig.6 is a block diagram of a third party device 30. It comprises:

- a memory 300 for storing multimedia contents, in particular a content to be downloaded or streamed to user devices during booting of said user devices in order to be played by said user devices while they are booting,
- transmission/reception means 310 for transmission/reception via the Web,
- a microprocessor arrangement 320 which comprises a working memory 330, a program memory 340 and a processor 350, and
- an interconnection bus 360.

The program memory 320 contains programs controlling the operation of the third party device 30 and amongst others a program PT for implementing the above-described process P2.

With respect to the above-described user device, method, third party device, system and programs, modifications or improvements may be proposed without departing from the scope of the invention. The invention is thus not limited to the examples provided.

5 Use of the verb “comprise” and its conjugation in the text and in the claims doesn’t exclude the presence of other means or steps than those listed.

Use of the article “a” for designating an element doesn’t exclude the presence of a plurality of such elements.

CLAIMS

1. A user device comprising:
 - means for communicating via a network,
 - means for booting,
 - 5 - means for implementing during said booting a protocol for transmission of a multimedia content by a third party device to said user device via said network,
 - means for playing during said booting a multimedia content transmitted by said third party device.

- 10 2. A user device as claimed in claim 1 comprising a memory for storing a multimedia content, wherein:
 - a) said protocol implementing means comprise:
 - means for transmitting a first request asking whether said third party device has a multimedia content to download to said user device,
 - 15 - means for receiving of a response to said first request,
 - means for sending a second request, depending at least on said response, said second request asking for the download of a multimedia content,
 - means for receiving the downloaded multimedia content,
 - means for storing the received content in said memory, and
 - 20 b) said playing means are designed to play a multimedia content stored in said memory prior to said downloading.

3. A user device as claimed in claim 1 wherein:
 - a) said protocol implementing means comprise:
 - 25 - means for transmitting a request asking for the streaming of a multimedia content, and
 - means for receiving a multimedia content streamed by said third party device in answer to said request, and
 - b) said playing means are designed to play the streamed multimedia content as it is received.

- 30 4. A user device as claimed in claim 3 comprising means for stopping playing when said booting is over.

5. A method of playing a content on a user device having means for communicating via a network, said method comprising the steps of:

- booting said user device,
- implementing during said booting a protocol for transmission of a multimedia content by a
- 5 third party device to said user device via said network,
- playing during said booting a multimedia content transmitted by said third party device.

6. A method as claimed in claim 5 of playing a multimedia content on a user device that comprises a memory for storing a multimedia content, wherein:

- 10 a) said protocol implementing step comprises:
 - transmitting a first request from said user device, said first request asking whether said third party device has a multimedia content to download to said user device,
 - transmitting a response to said user device, at least if said third party device has a
 - 15 multimedia content to download,
 - transmitting a second request from said user device depending at least on response, said second request asking for the download of said multimedia content,
 - downloading said multimedia content from said third party device to said user device,
 - storing the downloaded multimedia content in said memory, and
- b) said playing step comprises playing a multimedia content stored in said memory prior to
- 20 said downloading.

7. A method as claimed in claim 5 of playing a multimedia content on a user device, wherein:

- a) said protocol implementation step comprises:
 - 25 - transmitting a request from said user device, said request asking for the streaming of a multimedia content,
 - streaming a multimedia content from said third party device to said user device in answer to said request, and
- b) said playing step comprises playing the streamed multimedia content at said user device as
- 30 it is received.

8. A method of playing a multimedia content as claimed in claim 5, wherein said multimedia content is customized by said third party.

9. A method of playing a multimedia content as claimed in one of claim 5, wherein said multimedia content is compressed.

10. A third party device having means for communicating via a network and means for
5 implementing a protocol for transmitting a multimedia content to a user device via said network, said protocol implementation means comprising:

- means for receiving a first request sent by said user device, said first request asking whether said third party device has a multimedia content to download to said user device,
- means for transmitting a response to said user device, at least if said third party device has a
10 multimedia content to download to said user device,
- means for receiving a second request sent by said user device, said second request asking for the download of a multimedia content,
- means for downloading a multimedia content to said user device upon reception of said second request.

11. A system comprising at least a user device, a third party device and a network wherein said user device and said third party device comprise means for communicating via said network, and means for implementing a protocol for transmission of a multimedia content by said third party device to said user device, said user device further comprising:

- means for booting,
- means for initiating implementation of said protocol during booting,
- and means for playing during booting a multimedia content transmitted by said third party device.

12. A program comprising instructions for implementing a method as claimed in claim 5 when executed by a microprocessor of a user device.

ABSTRACT**METHOD OF PLAYING A MULTIMEDIA CONTENT TRANSMITTED BY A THIRD PARTY ON A USER DEVICE**

The invention proposes to transmit a multimedia content to a user device and to play a
5 multimedia content at said user device during booting of said user device. Transmission is
achieved by downloading or by streaming. The invention allows transmission of a start-up
content (for instance a video logo or advertisement) from an operator, a content provider or a
manufacturer to the user device. With the invention such a start-up content is customized by
the third party and can be updated when needed. The start-up content is transmitted at a time
10 where it doesn't disturb the user (during booting the user would anyway be unable to use
his/her device).

Reference: Fig.2

Application: consumer electronic devices, for example mobile phones, ADSL boxes, Set-
Top-Boxes.

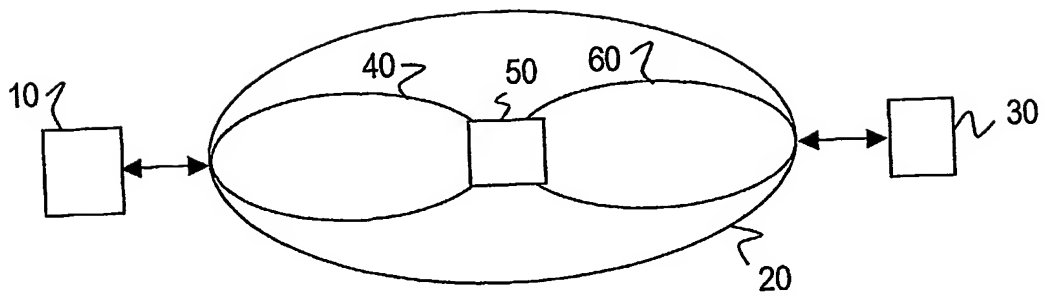


FIG. 1

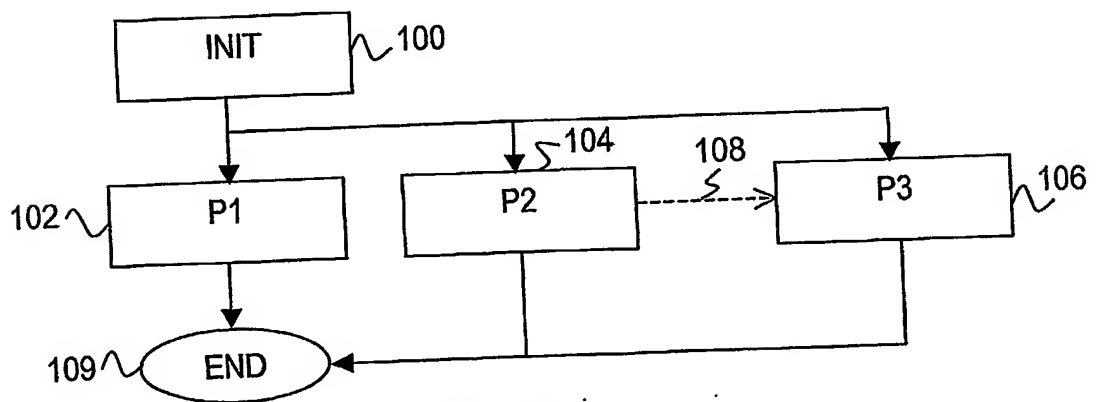


FIG. 2

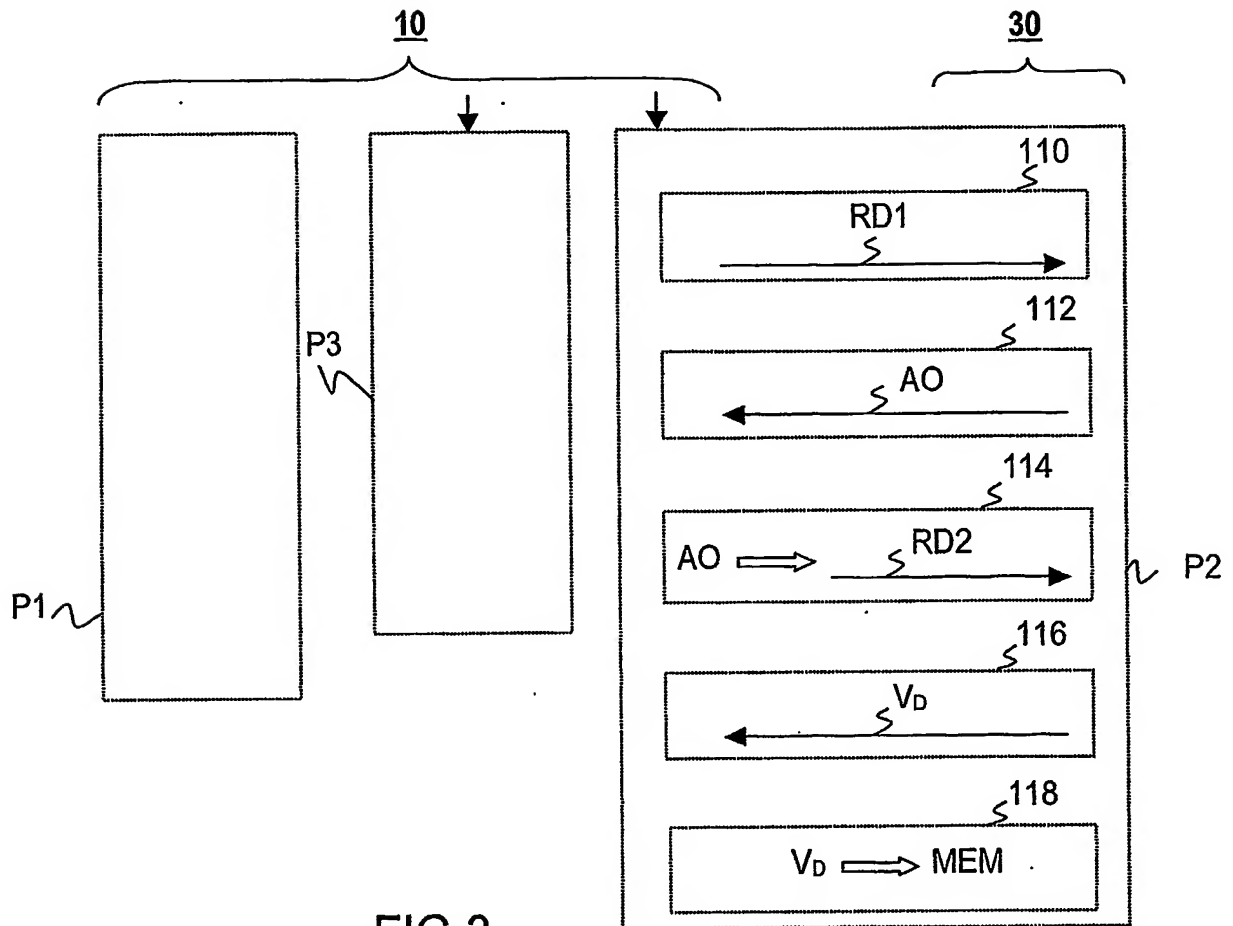


FIG. 3

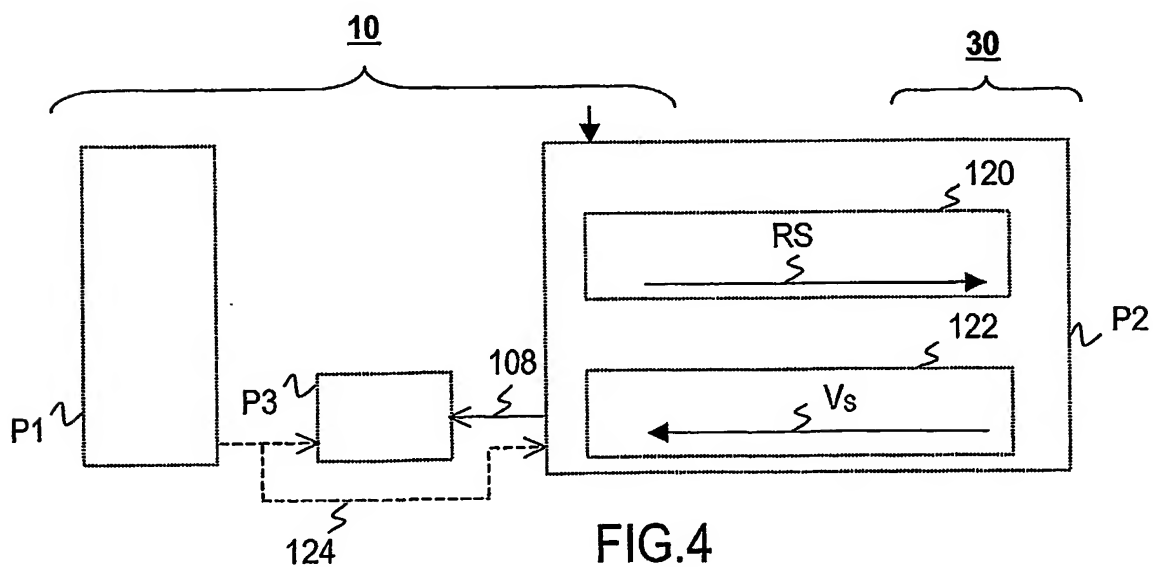


FIG. 4

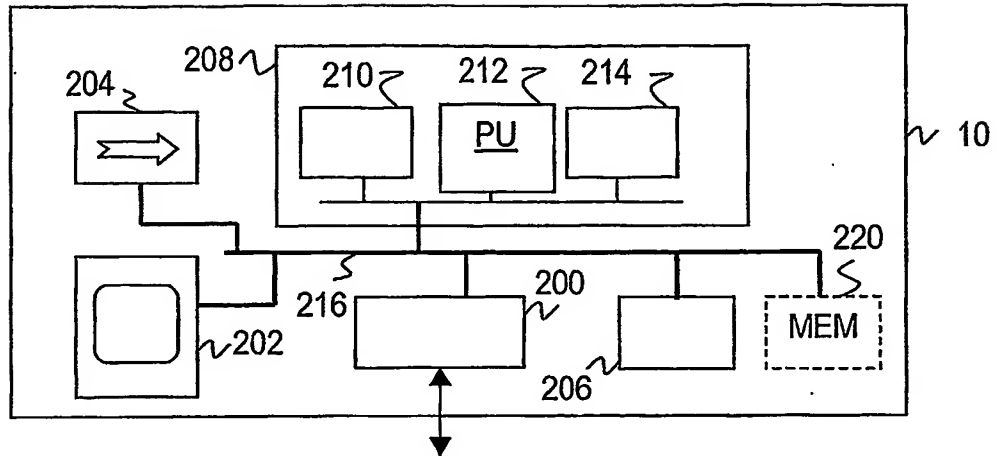


FIG. 5

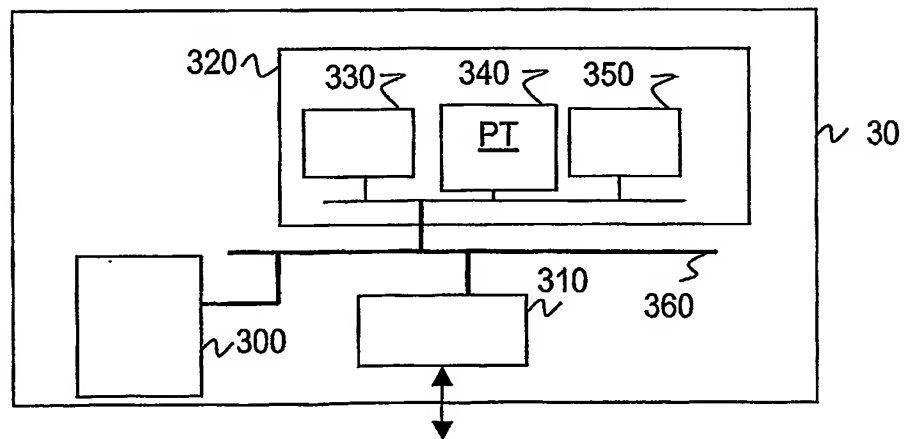


FIG. 6

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